



How can bugs help determine the quality of water?

Macroinvertebrates are animals that have no backbone and are visible without magnification. Stream-bottom macroinvertebrates include such animals as crayfish, mussels, aquatic snails, aquatic worms, and the larvae of aquatic insects.

Stream-bottom macroinvertebrates are an important part of the community of life found in and around a stream.

Stream-bottom macro-invertebrates are a link in the aquatic food chain. In most streams, the energy stored by plants is available to animal life either in the form of leaves that fall in the water or in the form of algae that grows on the stream bottom. The algae and leaves are eaten by macroinvertebrates. The macroinvertebrates are a source of energy for larger animals such as fish, which in turn, are a source of energy for birds, raccoons, water snakes, and even fishermen.

Stream-bottom macroinvertebrates differ in their sensitivity to water pollution.

Some stream-bottom macroinvertebrates cannot survive in polluted water. Others can survive or even thrive in polluted water. In a healthy stream, the stream-bottom community will include a variety of pollution-sensitive macro-invertebrates. In an unhealthy stream, there may be only a few types of nonsensitive macro-invertebrates present.

Stream-bottom macroinvertebrates provide information about the quality of a stream over long periods of time.

It may be difficult to identify stream pollution with water analysis, which can only provide information for the time of sampling. Even the presence of fish may not provide information about a pollution problem because fish can move away to avoid polluted water and then return when conditions improve. However, most stream-bottom macroinvertebrates cannot move to avoid pollution. A macro-invertebrate sample may thus provide information about pollution that is not present at the time of sample collection.

In 2013, the Kickapoo Environmental Office is planning to conduct macroinvertebrate sampling at three different sites on the Kickapoo Nation to find the variety of macroinvertebrate species present. The macroinvertebrate species can act as the water quality indicators and will provide a general idea about the Kickapoo surface water quality.



Figure 1: Megaloptera



Figure 2: Pouch snail



Figure 3: Stoneflies



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Community!*

We're on the Web!
<http://ktik-nsn.gov>

SAVE THE DATES!!!

Up-Coming Environmental Events

Kickapoo Fall Tire Round-Up

The week of September 10th-14th, 2012

Kickapoo Fall E-Waste Event

The week of October 1st-5th, 2012

Kickapoo Community Clean-UP

The week of October 15th-19th, 2012

K.E.O. Announces Green Wood Exchange Program

Many people heat their homes with wood stoves. If the wood you burn in your stove is green (less than one year since cutting), the fire will tend to smolder and produce smoke because wet wood causes the whole system to be cool and inefficient. Much of the smoke produced enters the outdoor air and increases air pollution, and some will also seep into your home and cause indoor air pollution problems. Exposure to wood smoke causes watery eyes, stuffy noses and tightness in the chest. Children, elders and people with asthma or heart disease can be severely affected by wood smoke. Inhaled small parti-

cles can trigger asthma attacks and have been linked to heart attacks in people with heart problems.

Beginning October 1, 2012, the Kickapoo Environmental Office will be offering seasoned fire wood in exchange for green wood. Limited funding from the United States Environmental Protection Agency was available for this program, and we have purchased 5½ cords of seasoned fire wood to exchange. Anyone in the community who heats a home with a fireplace or wood stove may drop off a pickup load of freshly cut firewood (green wood) and load an equivalent amount of

dry wood. Green wood must be traded for a similar amount of seasoned wood. The green wood received this year will be next year's seasoned wood.

Wood is stacked behind the Environmental Office, and the stacks are labeled as "Green Wood" and "Dry Wood." This is a community service provided by your Environmental Office. Please adhere to our honor system of exchanging equal amounts of green wood for dry wood. This program is one way that we can work together for clean air and a healthy community.

INFORMATION FOR GREEN WOOD EXCHANGE PARTICIPANTS

- Participation is on a first come, first served basis. We have 5½ cords of seasoned fire wood available for exchange.
- We operate on an honor system – this is **not** free firewood, but rather an **exchange** program.
- Wood exchanged should be between 12 inches and 25 inches in length.
- Whole round logs must not be over 16 inches in diameter. Wood does not need to be split – we will do that when it is dry enough.
- The amount of seasoned wood taken should be equivalent to the amount of green wood dropped off.
- Green wood should be stacked in one of the cords marked "GREEN WOOD."

Please contact Scott in the Environmental Office by e-mail at scott.weir@ktik-nsn.gov or by telephone at 486.2601 ext. 2 for more information.